

Cons and pros of female anesthesiologists: Academic versus nonacademic

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Abstract

Background and Aims: We hypothesized that “Feminization” of medicine has an impact on the choice of anesthesiology as a specialty. However anesthesiology is still not a more popular choice among women in medicine. We aimed to evaluate the implications of anesthesiology as a profession on personal and family life of women anesthesiologists; the differences between academic and nonacademic women anesthesiologists with respect to these effects and the effect of women anesthesiologists on the profession.

Materials and Methods: This study surveyed a total of 46 woman anesthesiologists; both academic and nonacademic institutions in our country between January and May 2013. A convenient sampling method was used. A constructed self-reported questionnaire was developed to explore the 29 items of woman-anesthesiology-related implications (family, personal, and job), in the form of close-ended questions.

Results: Negative implications of anesthesiology on personal and family life of woman were common. With the exception of financial limitation, academic group was significantly more affected. Increased surgeons conflict (98%), poor surgeon acceptance (87%), poor patient acceptance and recurrent change of work schedule (80% each) were the most common perceived negative impacts of women in the field of anesthesiology. Some positive implications were perceived as independent, positive social interaction, empowerment, soothing work environment, emotional reaction to patient complaint, and increased perfectionism (nearly 94%, 98%, 87%, 91%, 89%, and 76%, respectively).

Conclusion: Serious implications exist for the personality and family life of women who chose anesthesiology as a specialty and career, and most of these implications were significantly more prevalent among women with an academic career. Furthermore, anesthesiology as a profession was significantly affected by women joining the department.

Key words: Academic, female anesthesiologists, nonacademic

Introduction

Worldwide, there are currently as many women enrolled in medical schools as men.^[1,2] The so-called “feminization” of medicine is likely to have important implications in patient-physician relationship, local and societal delivery of care, and the medical profession itself.^[3] When specialty choices are examined, women are proportionately over represented

in the primary care fields. They are underrepresented in most surgical fields,^[4] with the exception of obstetrics and gynecology, where women now comprise the majority of practicing physicians.^[5]

Why anesthesiology is not a more popular specialty choice among women is difficult to determine. Lifestyle issues are often cited as an important consideration in the selection of a specialty for residency training, and anesthesiology is often included in lists of specialties said to be associated with favorable lifestyles.^[6] However, data indicate that anesthesiologists rank among the busiest specialists, with an average of 61 h/week committed to professional activities and an average of 59 h/week dedicated to patient care.^[7] Several studies have examined factors that influence specialty choice. Income expectations^[8] and personality factors^[9] gender discrimination and sexual harassment may be important factors.^[10,11] Some factors that may influence women on the choice of anesthesiology as a career is sparse or even no contact with anesthesiologists during the preclerkship medical school curriculum.^[12]

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Careers in medicine historically demanded a selfless emphasis on caring for one's patients, sometimes at the expense of one's marriage, children, and personal life.^[13,14] As women entering the medical field is increasing in numbers, the conflicts between career and family became more prominent. Thus, many challenges must confront woman physicians in balancing their multiple roles as physician, mother, and spouse.^[15] Women are underrepresented in anesthesia and with an effort to equalize the numbers of men and women within the medical school, one might expect the number of women entering anesthesiology to increase concomitantly.^[16] Mansoura is the capital city of Dakahlia which is one of the most important Egyptian provinces and is famous with many great medical centers. The total number of anesthesiologists in Mansoura city at the time of our study was 224 and the proportion of women among them was 25.9%, and the proportion of women among the doctors in general was nearly 51%. The aim of our work was to evaluate the implications of anesthesiology as a profession on personal and family life of women anesthesiologists. We also wished to elicit the differences between academic and nonacademic women anesthesiologists with respect to these effects and the effect of women anesthesiologists on the profession.

Materials and Methods

A descriptive comparative study was conducted by surveying women anesthesiologists in Mansoura, Egypt during the period between January and May 2013. The survey involved woman anesthesiologists affiliated with Mansoura University Hospital (academic anesthesiologists) and others working in hospitals related to Ministry of Health at Mansoura (nonacademic anesthesiologists).

During the study period, a convenience sample of 51 women were recruited, and 46 agreed to participate in the study with a nearly 90% response rate. The participation was entirely on a voluntary basis after their verbal consent. Our respondents were 23 academic anesthesiologists versus 23 nonacademic ones. Nonparticipation was due to lack of interest in the study, absence during the study period and incomplete questionnaires.

Approval to conduct our study was granted by our Institution's Review Board and from the management of the involved hospitals. The researchers introduced themselves to participants and informed them about the aims of the study. The participants were guaranteed anonymity and confidentiality. Woman doctors were allowed to respond in their own time and privacy.

A self-administered questionnaire was constructed to collect data. The survey instrument was developed from the literatures and informal discussions with anesthesiologists. The content validity was determined by consulting a panel of experts. To ensure reliability, the questionnaire was pretested through a pilot study on a group of doctors who were not included in the final analysis and Cronbach alpha coefficient of internal consistency was 0.87. The constructed survey instrument was finally edited in English version and consisted of four sections: The first section elicited some personal information of the respondents (Sociodemographic characteristics). The second part consists of 6 items exploring the potential reflection of anesthesiology on family life of women (implications on family life), the third contains 12 items asking about the possible reflection of anesthesiology on woman personality (implications on personality and personal life) and the final section elicits 11 items reflecting the perceived impact of women on anesthesiology as a profession (job implications). The responses were coded using the variables in the responses to determine the coding guide. To facilitate quantification and analysis of data, mainly close-ended questions were used along with rating scales. Respondents had options of "strongly agree" scored as five; "agree" scored as four; "undecided" scored as three; "disagree" scored as two and "strongly disagree" scored as one on a five point Likert scale.

Data were analyzed using SPSS program (Statistical Package for Social Sciences) version 13 windows (IBM, Inc., Chicago, Illinois, USA). Descriptive statistics (i.e., mean, frequency, percentage, and standard deviation) and inferential statistics (i.e., Chi-square test, Fisher's exact, and *t*-test) were used. Level of significance was set as $P \leq 0.05$. For comparison in order to evaluate the agreement among academic and nonacademic, items with multiple response levels were collapsed into binomial variables of "agree" and "disagree". A score of three (undecided) on Likert scale was considered as "disagree".

Results

The age of the anesthesiologists with an academic career was not significantly different from those without academic career (33.1 vs. 31.8 years). Nearly, one-fifth of our woman anesthesiologists were single (21.7%). The number of children in the two groups was not significantly different [Table 1].

The implications on family life were significantly much more afflicted by an academic career compared to nonacademic career in the form of: Delayed marriage (87% vs. 44%), delayed first baby (78% vs. 30%), child rearing (96% vs. 30%), maternity rights (91% vs. 26%) and poor fulfillment of family demand (83% vs. 44%) respectively [Table 2].

The majority of studied women reported personality changes. The positive implications on personality and personal life of anesthesiology as independence, empowerment and positive social interaction were not significantly different between the two groups. Furthermore, most of anesthesiology drawbacks on personality (aggression, nervousness, depression, stressful attitude, and drug experimentation) were significantly more cited by women with academic careers. However, the financial limitation was significantly more complained by the noncareer anesthesiologists ($P = 0.032$). The other negative effects observed in a large number of women in both groups were affection of feminine

attitude, sense of discrimination, and poor social acceptance [Table 3].

Anesthesiology was perceived privileged due to women's employment in the field by soothing the work environment, more emotional reaction to patient complaints and increased perfectionism (perceived by about 91%, 89% and 76% respectively). On the other hand, findings revealed that increased conflict with the surgeons (98%), poor surgeon acceptance (87%), poor patient acceptance and recurrent change of work schedule (80% each) were the most common items perceived by women as negative implications on the field

Table 1: Sociodemographic characteristics of the studied woman anesthesiologists

Characteristics	Total (n = 46) n (%)	Academic (n = 23) n (%)	Nonacademic (n = 23) n (%)	P value
Age (years): Mean±SD	33.1±6.7	34.2±6.2	31.5±7.1	0.512
Marital status				
Married	36 (78.3)	17 (73.9)	19 (82.6)	0.476
Single	10 (21.7)	6 (26.1)	4 (17.4)	0.720
Number of children				
0	11 (23.9)	7 (30.4)	4 (17.4)	0.059
1-3	27 (58.7)	15 (65.2)	12 (52.2)	
>3	8 (17.4)	1 (4.3)	7 (30.4)	

SD=Standard deviation

Table 2: Implications on family life among the studied woman anesthesiologists

Implications on family life ^a	Total n (%)	Academic (n = 23) n (%)	Nonacademic (n = 23) n (%)	P value
Delayed marriage (≥32 years)	30 (65.2)	20 (86.9)	10 (43.5)	0.002*
Delayed first baby	25 (54.3)	18 (78.3)	7 (30.4)	0.001*
Pregnancy related problems [#]	4 (8.7)	3 (13.0)	1 (4.3)	0.607
Affected child rearing	29 (63.0)	22 (95.6)	7 (30.4)	<0.001*
Affected maternity right	27 (58.7)	21 (91.3)	6 (26.1)	<0.001*
Poor fulfillment of family demand	29 (63.0)	19 (82.6)	10 (43.5)	0.006*

^aCategories are not mutually exclusive, [#]Abortion, premature labor and preeclampsia, *Significant when $P \leq 0.01$

Table 3: Implications on personality and personal life of among the studied woman anesthesiologists

Implications on personality and personal life ^a	Total (n = 46) n (%)	Academic (n = 23) n (%)	Nonacademic (n=23) n (%)	P value
Independency	43 (93.5)	23 (100)	20 (86.9)	0.073
Empowerment	40 (86.9)	21 (91.3)	19 (82.6)	0.381
Positive social interaction	45 (97.8)	23 (100)	22 (95.6)	0.312
Aggression	21 (45.7)	14 (60.9)	7 (30.4)	0.038*
Nervousness	30 (65.2)	19 (82.6)	11 (47.8)	0.013*
Depression	27 (58.7)	17 (73.9)	10 (43.5)	0.036*
Stressful attitude	35 (76.1)	21 (91.3)	14 (60.9)	0.015*
Affection of feminine attitude	37 (80.4)	18 (78.3)	19 (82.6)	0.710
Financial limitation	36 (78.3)	15 (65.2)	21 (91.3)	0.032*
Sense of discrimination	41 (89.1)	22 (95.6)	19 (82.6)	0.155
Drug experimentation	27 (58.7)	17 (73.9)	10 (43.5)	0.036*
Poor social acceptance	35 (76.1)	16 (69.6)	19 (82.6)	0.299

^aCategories are not mutually exclusive, *Significant when $P \leq 0.05$

of anesthesiology as a result of women's employment. Difficult to manage night shifts was more significantly mentioned by academic career anesthesiologists compared to the others ($P < 0.001$) [Table 4].

Discussion

We cannot deny that rearing and caring at home are the primary role for any woman whatever her level of education, especially in Arab countries.

Biologically, the most appropriate time for the woman to have children coincides with the period when career demands are most intense, making the balancing of career and family demands particularly difficult during this period.^[17] This critical period usually overlaps with the medical study and training, particularly with financial limitations and high work demands.^[13]

The implications on family life were significantly much more expressed by women anesthesiologists with academic career, and more than 50% of both women groups perceived that their family life was exposed to negative implications. Although only 9% of women with delayed marriage blamed anesthesiology work as a predisposing factor for their pregnancy problems, however this needs consideration. These findings were concomitant with a previous study which reported that most doctors recommended postponing pregnancy until after the completion of training.^[18] In contrast, another survey study conducted on pediatricians found that they gave birth to their first child during residency.^[19] Our results could be explained by the fact that most of the academic career anesthesiologists have an intense schedule with teaching, research and regular OR duties. The present findings were also coinciding with the study that found

woman resident physicians experienced more pre-eclampsia and preterm labor than other women.^[15]

Unfortunately, our results emphasized that the interest of female doctors in academic medicine is reduced. This could be explained by many concerns that may range from balancing their multiple roles^[20] to the worry of physician-mother on the child's safety while she is away from home.^[15] Furthermore, the view of some colleagues to a woman doctor's pregnancy and family commitments as evidence of a diminished dedication to medicine and career can be a contributory factor. The study of Carr *et al.*, support some of the previous concerns by concluding that decreased academic progress was related to childbearing.^[21] The present work showed that the maternity rights were affected for more than 58% of our women anesthesiologists, and this was significantly higher among career group. In Egypt, even with the presence of a law that allows 3 months of full paid maternity leave, some women-doctors due to fear of demotion in their career, are pushed to sacrifice their maternity rights. It was surprising to know that many American physicians do not take the entire 6 weeks of maternity leave to which they are entitled.^[4,22-24] This action was partly explained by the concern of their colleagues' attitudes toward their staying home with their infant or by their feeling guilty about being away from their patients and work.^[15]

Regarding implications on personality, the present study established that our ladies were privileged by their choosing anesthesia as a career, where most of them felt independent and empowered besides developing positive social interaction. Previous studies support our finding by demonstrating that woman had greater adaptability to clinical situations,^[25] better vigilance, perceptual speed and associative memory that might give them an edge over males to recall more details.^[26] University staff in general has a better income compared to nonacademic which is a privilege granted by higher

Table 4: The perceived implications of women on anesthesiology as a profession among the studied woman anesthesiologists

Implications on profession ^a	Total (n = 46) n (%)	Academic (n = 23) n (%)	Nonacademic (n = 23) n (%)	P value
Increased perfectionism	35 (76.1)	19 (82.6)	16 (69.6)	0.30
Soothing work environment	42 (91.3)	20 (86.9)	22 (95.6)	0.295
Emotional reaction to patient complaint	41 (89.1)	21 (91.3)	20 (86.9)	0.636
Delayed response to on call	25 (54.3)	13 (56.5)	12 (52.2)	0.767
Difficulty to manage night shifts	24 (52.2)	20 (86.9)	4 (17.4)	<0.001*
Poor patient acceptance	37 (80.4)	17 (73.9)	20 (86.9)	0.265
Poor surgeon acceptance	40 (86.9)	19 (82.6)	21 (91.3)	0.381
Increased conflict with the surgeons	45 (97.8)	23 (100)	22 (95.7)	0.312
Increased absenteeism due to maternity rights	28 (60.9)	15 (65.2)	13 (56.5)	0.546
Increased malpractice	32 (69.6)	17 (73.9)	15 (65.2)	0.522
Recurrent change of work schedule	37 (80.4)	18 (78.3)	19 (82.6)	0.710

^aCategories are not mutually exclusive, *Significant when $P \leq 0.01$

education committee in Egypt to encourage the graduated physician to be a university staff. This can partly explain the significant financial problems encountered by nonacademic anesthesiologists in comparison to those in academic careers.

The sense of discrimination due to gender is considered as a major factor that has a great negative impact on our woman anesthesiologists and represents 78% in this study. Gardner *et al.*, have reported that although woman anesthesiologists in South Africa have higher career satisfaction; gender discrimination and harassment were found to be more likely among women.^[27] In contrast, a Canadian study revealed an absence of gender discrimination.^[28]

Regarding the implications on profession the current study showed that around 98% of woman anesthesiologists complained from increased conflict with surgeons and this may give an explanation, not only for the high stressful attitude of two-third of our sample but also for the women perversion from anesthesia specialty. Regardless of gender bias, conflicts with surgeons could be explained by the facts that surgeons have often been perceived by other physicians with negative features such as aggressive, dominating, cold, impatient, and selfish.^[27] These conflicts were commonly attributed to poor communication,^[29,30] and limited contact between males and females in our culture, especially in a society like Mansoura.

In this study, alternative change of work schedule, delayed response to on call and difficult to manage night shifts were reported by 80%, 54% and 52% of the studied groups, respectively. One study concluded that 85% of women were more prone to modify their job tasks or alter their career for the benefit of their families and children compared to only 35% of male physicians.^[30]

Job stress and its implications were so clear in our study, and this was supported by a previous Egyptian study which observed more fatigue and psychological distress among anesthesiologists.^[31] Kinzl *et al.*, have reported that woman anesthesiologists showed higher concentration and limited possibilities to control work environments as compared to their male colleagues.^[32]

It is not surprising, that our findings revealed high significant domination of an academic career over noncareer woman anesthesiologists regarding most of the anesthesiology drawbacks reflected on women, which were discussed in this study. Hence, we can use our findings to explain the results of another study, which reported that the percentage of women faculty members in all specialties who reach the designation of full professor insulates well-behind that of men, and this is

definitely true for anesthesiology,^[22] the findings of our study are discouraging as literature has revealed that the healthy development of anesthesiology requires a vital increase in the number of women affiliate to academic anesthesiology.^[33] Gender disparities in academic promotion leading to less likelihood of external grant funding and fewer publications than men could be a contributory factor.^[34,35] Furthermore, the junior partners are assigned to more work pressures, less desirable pay and they are frequently scheduled for later hours, on weekends and during holidays.^[36-38]

Limitations

Our findings have to be discussed in the light of many potential limitations. One of the major limitation is the cross-sectional design of the study that was based on self-reported questionnaires provided by women. Furthermore, the small sample size may be another limitation to detect the accurate gender associations. Also the exclusion of male's opinions from the survey; and the sociocultural factors of this study that make the number of woman anesthesiologists limited may interfere with the generalizability of our results to anesthesiologists in other societies. However, as we try to recruit most women anesthesiologists working in Mansoura hospitals, the results have external validity of women working as anesthesiologists in Mansoura, Egypt.

Conclusions

The study delineated the implications on the personality and family life of women who selected academic anesthesiology as a specialty and career. Furthermore, anesthesiology as a profession is significantly benefited by women joining in the academic ranks.

References

1. Bickel J, Croft K, Marshall R. Women in U.S. Academic Medicine Statistics 1997-1998. Washington, DC: Association of American Medical Colleges; 1998.
2. Burton KR, Wong IK. A force to contend with: The gender gap closes in Canadian medical schools. *CMAJ* 2004;170:1385-6.
3. Levinson W, Lurie N. When most doctors are women: What lies ahead? *Ann Intern Med* 2004;141:471-4.
4. Bowman MA, Frank E, Allen DI. Women in Medicine: Career and Life Management. New York: Springer-Verlag; 2002.
5. Bickel J, Clark V, Lawson RM. Women in U.S. Academic Medicine Statistics 2000-2001. Washington, DC: Association of American Medical Colleges; 2001.
6. Dorsey ER, Jarjoura D, Rutecki GW. Influence of controllable lifestyle on recent trends in specialty choice by US medical students. *JAMA* 2003;290:1173-8.
7. AMA. Physician Socioeconomic Statistics. Chicago, IL: AMA; 2003.
8. Hojat M, Gonnella JS, Erdmann JB, Rattner SL, Veloski JJ, Glaser K, *et al.* Gender comparisons of income expectations in the USA at

- the beginning of medical school during the past 28 years. *Soc Sci Med* 2000;50:1665-72.
9. Stilwell NA, Wallick MM, Thal SE, Burleson JA. Myers-Briggs type and medical specialty choice: A new look at an old question. *Teach Learn Med* 2000;12:14-20.
 10. Park J, Minor S, Taylor RA, Vikis E, Poenaru D. Why are women deterred from general surgery training? *Am J Surg* 2005;190:141-6.
 11. Stratton TD, McLaughlin MA, Witte FM, Fosson SE, Nora LM. Does students' exposure to gender discrimination and sexual harassment in medical school affect specialty choice and residency program selection? *Acad Med* 2005;80:400-8.
 12. Brull R, Bradley JW. The role of anesthesiologists in Canadian undergraduate medical education. *Can J Anaesth* 2001;48:147-52.
 13. Bickel J. *Women in Medicine: Getting in, Growing, and Advancing*. Thousand Oaks, Calif: Sage Publications; 2000.
 14. Riska E, Weagar K. *Gender, Work and Medicine: Women and the Medical Division of Labour*. London: Sage Publications; 1993.
 15. Verlander G. Female physicians: Balancing career and family. *Acad Psychiatry* 2004;28:331-6.
 16. Baerlocher MO, Hussain RA, Bradley J. Gender patterns amongst Canadian anesthesiologists. *Can J Anaesth* 2006;53:437-41.
 17. Carnes M. Balancing family and career: Advice from the trenches. *Ann Intern Med* 1996;125:618-20.
 18. Sinal S, Weavil P, Camp MG. Survey of women physicians on issues relating to pregnancy during a medical career. *J Med Educ* 1988;63:531-8.
 19. Tinsley JA. Pregnancy of the early-career psychiatrist. *Psychiatr Serv* 2000;51:105-10.
 20. Osborn EH, Ernster VL, Martin JB. Women's attitudes toward careers in academic medicine at the University of California, San Francisco. *Acad Med* 1992;67:59-62.
 21. Carr PL, Ash AS, Friedman RH, Scaramucci A, Barnett RC, Szalacha L, *et al*. Relation of family responsibilities and gender to the productivity and career satisfaction of medical faculty. *Ann Intern Med* 1998;129:532-8.
 22. American Medical Association: *Women in Medicine in America: In the Mainstream*. Chicago: American Medical Association; 1995.
 23. Parental leave for residents. American College of Physicians. *Ann Intern Med* 1989;111:1035-8.
 24. Menninger EW. The impact of the family on careers in psychiatry. *Bull Menninger Clin* 1994;58:497-501.
 25. Warde C, Allen W, Gelberg L. Physician role conflict and resulting career changes. Gender and generational differences. *J Gen Intern Med* 1996;11:729-35.
 26. Amr M, Raddad D, Afifi Z. Objective Structured Clinical Examination (OSCE) during psychiatry clerkship in a Saudi University. *Arab J Psychiatry* 2012;23:69-73.
 27. Gardner SV, James MF, Evans NR. Gender issues among South African anaesthetists. *S Afr Med J* 2002;92:732-6.
 28. Baerlocher MO, Detsky AS. Are applicants to Canadian residency programs rejected because of their sex? *CMAJ* 2005;173:1439-40.
 29. Studdert DM, Mello MM, Burns JP, Puopolo AL, Galper BZ, Truog RD, *et al*. Conflict in the care of patients with prolonged stay in the ICU: Types, sources, and predictors. *Intensive Care Med* 2003;29:1489-97.
 30. American Medical Association: H-420. 976 Maternity Leave Policies. Available at: <https://ssl3.ama-assn.org/apps/ecommm/PolicyFinderForm.pl?site=www.ama-assn.org&uri=%2fresources%2fdoc%2fPolicyFinder%2fpolicyfiles%2fHnE%2fH-420.967.HTM>.
 31. Mansour A, Riad W, Moussa A. The occupational fatigue in anesthesiologists: Illusion or real? *Middle East J Anesthesiol* 2010;20:529-34.
 32. Kinzl JF, Traweger C, Trefalt E, Riccabona U, Lederer W. Work stress and gender-dependent coping strategies in anesthesiologists at a university hospital. *J Clin Anesth* 2007;19:334-8.
 33. Wong CA, Stock MC. The status of women in academic anesthesiology: A progress report. *Anesth Analg* 2008;107:178-84.
 34. Nattlinger AB. Promoting the career development of women in academic medicine. *Arch Intern Med* 2007;167:323-4.
 35. Ledin A, Bornmann L, Gannon F, Wallon G. A persistent problem. Traditional gender roles hold back female scientists. *EMBO Rep* 2007;8:982-7.
 36. Al-Tamimi DM. Saudi women in academic medicine. Are they succeeding? *Saudi Med J* 2004;25:1564-7.
 37. Boulet JR, McKinley DW, Norcini JJ, Whelan GP. Assessing the comparability of standardized patient and physician evaluations of clinical skills. *Adv Health Sci Educ Theory Pract* 2002;7:85-97.
 38. Nonnemaker L. Women physicians in academic medicine: New insights from cohort studies. *N Engl J Med* 2000;342:399-405.

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